SECOR

SECOR
INTERNATIONAL
INCORPORATED

www.secor.com
2655 Camino Del Rio N. Suite 302
San Diego, CA 92108
619-296-6195 TEL
619-296-6199 FAX

May 23, 2005

Project No. 08BP.06061.05

Well Permit Desk
County of San Diego, Department of Environmental Health
Land and Water Quality Division
P.O. Box 129261
San Diego, California 92112-9261

Subject: **Well Destruction Permit**
ARCO Facility #6061
593 North Mollison Avenue
El Cajon, California 92021
SAM Case No. H07106-001
Well Destruction Permit # LMON T102796 (ON HOLD)

Dear Sir or Madam:

The requested additional information and documents for this subject well destruction permit are enclosed as follows:

- Proposed Horizontal Vapor Extraction Wells Destruction, HVW-1 through HVW-4
- Well recognizance survey to verify the presence or absence of wells W-3 and SOW-1
- Property Owner Responsibility Acknowledgement for off-site wells W-10a and W-9a
- Property Owner Responsibility Acknowledgement for on-site wells.
- Table 1 and Figure 2 summarizing and identifying the number and location of wells to be destroyed
- Schematic boring well abandonment figure showing the different well depths (Figure 3)
- Available borehole/well log showing well construction details for wells

If additional information is required, please contact the undersigned at (619) 296-6195.

Sincerely,

SECOR International Incorporated

REGISTERED GEOLOGIST
CAROLE M. FARR
NO. 7434
EXP. 6/30/06
STATE OF CALIFORNIA

J. Carlos Rodriguez
Project Geologist

Carole M. Farr
Senior Geologist

Enclosures:

P:\Arco\6061\ar606169(WellPermit ltr).doc

Proposed Horizontal Vapor Extraction Wells Destruction (HVW-1 through HVW-4)

The well destruction will be performed by a California C-57 licensed contractor and supervised by SECOR personnel working under the supervision of a California Professional Geologist. SECOR will destroy the horizontal casings for HVW-1 through HVW-4 by the pressure grout method. As shown in the enclosed well construction details for the horizontal soil vapor extraction well casing depths are approximately 4 feet below ground surface (bgs) and approximately 3 feet bgs above the groundwater table. Prior to pressure grouting, the vapor extraction wells will be inspected for physical obstructions, which if found, will be removed prior to the introduction of bentonite grout into the well casing. A sealed well cap with a pressure release mechanism will be placed on top of the casing. Approximately 25 pounds per square inch of pressure will be maintained for 5 minutes to force the bentonite grout out through the slots in the horizontal well casing. The well vaults and concrete will be removed and the pvc raiser will be cut and capped. This will ensure that the grout fills the filter pack and the borehole to the extent practicable. It should be noted that there is high probability that pea gravel may be encountered on the wells installed in or around the former and present UST locations in which case neither the pressure grout method for the horizontal casings (HVW-1 could be such a case) nor the overdrilling for the regular vertical groundwater monitoring wells will be feasible or practical; therefore, variances to abandon these wells will be requested to the Well Permit Desk, but these will have to be dealt on a case by case basis. Once the well vaults are removed all the subsequent void spaces will be backfilled with concrete to match the grade and appearance of the surrounding surface.

Well Recognizance Survey

On May 10, 2005, SECOR performed a well recognizance survey at the site and identified 19 on-site wells to be destroyed (see summary of wells to be destroyed; Table i). The well survey confirmed that neither SOW-1 nor W-3 have been destroyed. The confusion apparently originates from recent used site plan figures that don't show SOW-1, and from a letter to the DEH dated August 28, 1989, that confirms that well W-3 was destroyed. Apparently well W-3 was misidentified with GT-2 which was in fact destroyed. The destruction of well GT-2 is referenced in a memorandum to Mr. Kevin Heaton dated August, 16, 1989 (attached). SOW-1 and W-3 are now part of the well destruction permit.

GROUNDWATER TECHNOLOGY, INC.
11100 Roselle Street, Suite C, San Diego, CA 92121
(619) 453-8415

MEMORANDUM

TO: Mr. Kevin Heaton, HMMD
From: Barry S. Pulver
Date: 8/16/89
RE: Well Abandonments

Dear Kevin:

As discussed on 8/14/89, due to upcoming tank pulls at Arco SS# 5393 (2717 Lemon Grove Ave.) and SS# 6061 (593 N. Mollison) three monitoring wells will be abandoned. The wells were recentely installed, under permit (APN 480-410-15 and APN 483-380-36). Monitoring wells GT-2 and GT-3 will be abandoned at 2717 Lemon Grove Ave. Monitoring well GT-2 will be abandoned at 593 N. Mollison.

Well abandonment will be performed by first over-drilling to remove the gravel pack, then removing to well casing and screen. The holes will be backfilled using Volclay grout.

Well abandonments are planned to be performed on 8/21/89. Should you have any questions regarding this letter please give me a call.

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address:

596 North Mollison Avenue
El Cajon, CA 92021

Assessor's Parcel Number (APN):

483-380-41-00

I(We), Eddie Hamana, owner(s) of the property/properties listed above, give my permission to SECOR International Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

Install_____ monitoring wells Destroy __2____ monitoring wells Drill ____soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the Responsible Party. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the Responsible Party must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the Responsible Party, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Carole M. Farr (registered professional) of SECOR International Inc. (consulting company) and authorized signer for West Hazmat Drilling Corp. (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: _____

Print Name: EDDIE

Date: 3/18/05

Title: Owner

Company: QUICK TRIP

Mailing Address: 596 N MOZLISON BLCAJON CA 92-3:(

County of San Diego

GARY W. ERBECK
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(619) 338-2222 FAX (619) 338-2377
1-800-253-9933

RICHARD HAAS
ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work:

Property Address:

593 North Mollison Avenue
El Cajon, CA 92021

Assessor's Parcel Number (APN):

483-380-3600

I(We), BP West Coast Products LLC, owner(s) of the property/properties listed above, give my permission to SECOR International Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

Install_____ monitoring wells Destroy 19 monitoring wells Drill ___ soil borings

The person who causes to have a monitoring well installed or an existing well destroyed on this property is defined as the Responsible Party. San Diego County Code, Section 67.424, states that: "Monitoring wells shall be maintained to meet construction or destruction standards. If a monitoring well does not meet construction or destruction standards, the Responsible Party must repair, reconstruct or destroy the monitoring well so it meets the standards. The property owner, if different than the Responsible Party, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions."

A soil boring is used specifically to sample soil and, because there are construction and destruction standards, is included in the definition of a monitoring well even though no maintenance is required. These standards are outlined in the County of San Diego Site Assessment and Mitigation (SAM) Manual and the State of California Well Standards Bulletin 74-90.

I understand that Carole M. Farr (registered professional) of SECOR International Inc. (consulting company) and authorized signer for West Hazmat Drilling Corp. (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

I also understand that if either the registered professional and/or the licensed drilling company should fail in their responsibilities as defined in San Diego County Code, Section 67.424, I, as the property owner, must take the necessary actions to repair, reconstruct or destroy the monitoring well so it meets the standards if the Responsible Party does not complete the necessary actions.

The scope of work covered by this Acknowledgement will expire one year from the date of the property owner's signature below. If an extension of time beyond one year is required to complete the proposed drilling activities or additional work is proposed, a new Property Owner Responsibility Agreement will be required.

Property Owner Signature: Roy Thun (MZ)

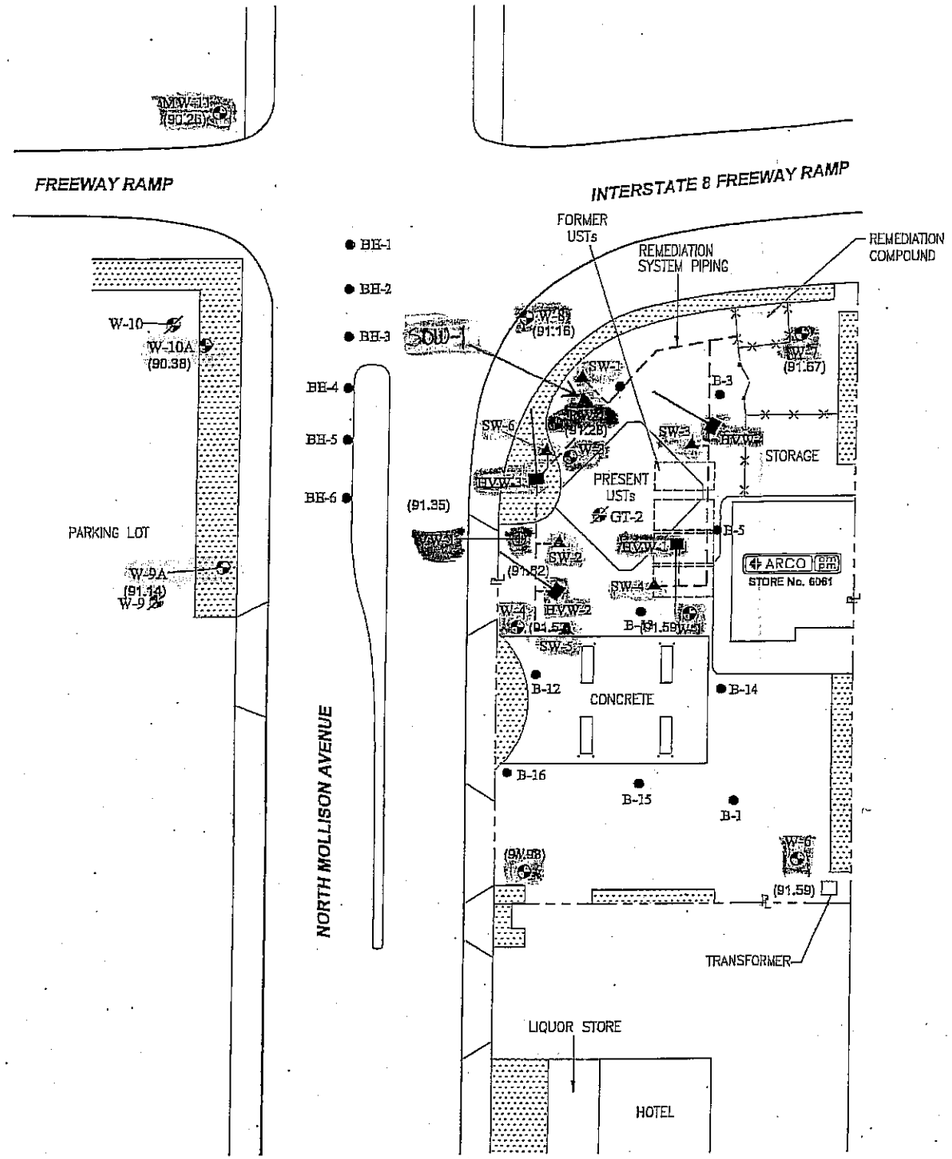
Print Name: Roy Thun

Date: 2-17-05

Title: Envir. Business Manager

Company: B. P.

Mailing Address: 4 Centerpointe Dr., La Palma, CA



WELL	SCREEN	HOOKED UP TO SVE OR AS SYSTEM
W-1	5'-10'	NO
W-3	5'-20'	NO
W-4	5'-22'	NO
W-5	5'-20'	NO
W-6	5'-20'	NO
W-7	5'-20'	NO
W-9A	4'-19'	NO
W-10A	4'-19'	NO
W-8	5'-20'	NO
W-9	4'-19'	NO
W-10	4'-19'	NO
MW-11	5'-20'	NO
RW-1	5'-25'	NO
VW-1	5'-10'	NO
HVW-1	HORIZ. @4'	YES
HVW-2	HORIZ. @4'	YES
HVW-3	HORIZ. @4'	YES
HVW-4	HORIZ. @4'	YES
SW-1	17'-19'	YES
SW-2	17'-19'	YES
SW-3	17'-19'	YES
SW-4	21'-24'	YES
SW-5	17'-20'	YES
SW-6	18'-19.5'	YES
SOW-1	17'-19'	NO

LEGEND:

- MONITORING WELL
- VAPOR EXTRACTION WELL
- HORIZONTAL VAPOR EXTRACTION WELL
- AIR SPARGE WELL
- ABANDONED MONITORING WELL
- SOIL BORING
- PLANTER
- PL PROPERTY LINE
- UST UNDERGROUND STORAGE TANK

N

0 50 100

APPROXIMATE SCALE IN FEET

DRAWN BY:	RJO
CHECKED:	
APPROVED:	
DATE:	2/4/03
JOB No.:	08BP.06061.03
CAD FILE:	6061SP

PREPARED BY:

SECOR

2655 Camino del Rio North, Suite 302
San Diego, California

PREPARED FOR:

ARCO FACILITY #6061
593 N. Mollison Avenue
El Cajon, California

FIGURE 1

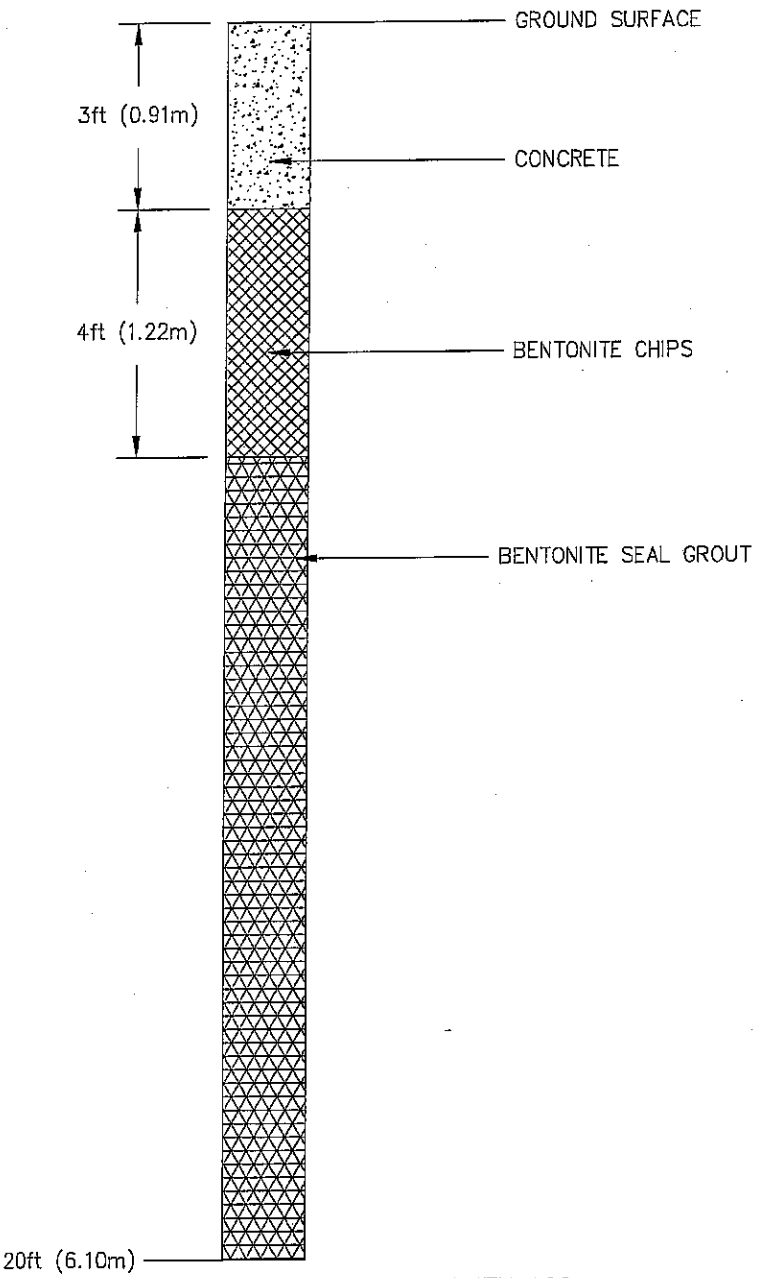
SITE PLAN

P:\CAD\ALLPROJECTS2003\DWGS\Arco 2004\6061-2KA\6061SP11-04.DWG MODIFIED BY FDODGE ON Nov 17, 2004 - 12:17

TABLE 1

SUMMARY OF WELLS TO BE DESTROYED
ARCO Facility #6061
593 N. Mollison Avenue
El Cajon, California 92021

Well Identification	These 19 Wells are located on-site at 593 N. Mollison Avenue	Color Code on Site Plan
W-1		
W-3		
W-4		
W-5		
W-6		
W-7		
SW-1	▲	
SW-2	▲	
SW-3	▲	
SW-4	▲	
SW-5	▲	
SW-6	▲	
SOW-1	▲	
HVW-1	■	
HVW-2	■	
HVW-3	■	
HVW-4	■	
VW-1		
RW-1		
Well Identification	**These 2 Wells are located off-site at 596 N. Mollison Avenue**	**Color Code on Site Plan**
W-9A		
W-10A		
Well Identification	**These 2 Wells are located off-site on Caltrans right of way**	**Color Code on Site Plan**
MW-11		
MW-8		



OR ACTUAL DEPTH OF WELL AS SHOWN ON WELL LOG.

NOTE:
THERE ARE EIGHT DIFFERENT WELL DEPTHS
(10 FEET (ft), 19ft, 19.5ft, 20ft, 21ft, 24ft , 25ft AND 26.5ft)

NOT-TO-SCALE

SECOR
2655 CAMINO DEL RIO NORTH, SUITE 302
SAN DIEGO, CALIFORNIA
PHONE: (619) 296-6195/296-6199 (FAX)

FOR:				FIGURE:
ARCO FACILITY #6061 593 North Mollison Avenue El Cajon, California		**BORING WELL ABANDONMENT (TYPICAL)**		3
JOB NUMBER: 08BP.06061.04	DRAWN BY: PD	CHECKED BY:	APPROVED BY:	DATE: 11/16/04

FILEPATH: P:\CAD\ALLPROJECTS2004DWGS\ARCO 2004\6061-2K4\6061MWC.DWG MODIFIED BY ROCAMPO ON MAY 23, 2005 - 8:46

6061MWC

SECOR

BOREHOLE / WELL LOG

Number: W - 9A

Sheet: 1 of 1

Client: ARCO Products Corp.

Job No: 008.60009

Location: ARCO Facility #6061, 593 North Mollison Ave., El Cajon, CA 92091

Drilling Company/Driller: West Hazmat Drilling Co., Robert Suffle

SECOR Rep: Nikole Immel

Approved by:

Date Started: 12/2/99

Date Finished: 12/2/99

Drill Rig/Sampling Method: CME-75 / Hollow-stem Auger/Split Spoon Sampler

Borehole Dia.: 8"

Casing Dia.: 2"

Surface Elevation: --

SAMPLE LOG			BOREHOLE LOG					WELL LOG
Sample Number	OVA/PID (ppm)	Lab Results TPHg(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
				0			Top Soil and organics	
				1	ML		SILT, dark yellowish brown (10YR 4/4), trace fine sand, dry, hard no hydrocarbon (HC) odor.	
				2				
				3				
				4				
				5				
				6				
			46/6	7				
			56/6	8				
W-9A-8.5'	0	--	46/6 36/6	9			Silty SAND, very dark grayish brown (10YR 3/2), fine-grained, moist, very hard, moderate HC odor.	
W-9A-9.0'	0	0.3	30/6	10	ML			
				1				
				2				
				3				
				4				
				15				
				6				
				7				
				8				
				9				
W-9A-20'	0	ND	60/6	20	ML		Sandy SILT, brown (10YR 4/3), fine grained sand, wet, hard, no HC odor.	
				1			TOTAL DEPTH = 20 FEET BGS.	
				2				
				3			Completed as a groundwater monitoring well with screen interval from 19 feet to 4 feet. Screen is 2 inch diameter sch. 40 PVC with 0.020 slot size. Blank casing is 2 inch diameter PVC. Screen interval filter packed with #3 SAND.	
				4				
				25				
				6				
				7				
				8				
				9				
				30				

SECOR

BOREHOLE/WELL (ANGLED) LOG

Number: W - 10A

Client: ARCO Products Corp.

Job No: 008.60009

Sheet: 1 of 1

Location: ARCO Facility #6061
593 North Mollison Ave.
El Cajon, CA 92091

Drilling Company/Driller: West Hazmat Drilling Co./ Robert Suffle

SECOR Rep: Nikole Immel

Approved by:

Date Started: 12/2/99

Date Finished: 12/2/99

Drill Rig/Sampling Method: CME-75 / Hollow-stem Auger/Split Spoon Sampler

Borehole Dia.: 8"

Casing Dia.: 2"

Surface Elevation: --

SAMPLE LOG			BOREHOLE LOG					WELL LOG
Sample Number	OVA/PID (ppm)	Lab Results TPHg(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
				0			Top Soil	
				1	ML		SILT, dark yellowish brown (10YR 4/4), trace fine sand, dry and hard.	
				2				
				3				
				4				
				5				
				6				
				7			dark grayish brown (10Y 4/2) and moist at 7 ft.	
				8				
				9				
				10				
				1				
				2				
				3			– increased fine grained SAND content at 14', becomes brown (7.5YR 4/3)	
				4				
				15				
				6	ML		Sandy SILT, brown (10YR 4/3), fine grained sand, wet	
				7				
				8				
				9				
				20			TOTAL DEPTH = 20 FEET BGS.	
				1				
				2			Completed as a groundwater monitoring well with screen interval from 19 feet to 4 feet. Screen is 2 inch diameter sch. 40 PVC with 0.020 slot size. Blank casing is 2 inch diameter PVC. Screen interval filter packed with #3 SAND.	
				3				
				4				
				25				
				6				
				7				
				8			Note: Well installed at 10 angle from vertical. No split spoon soil samples collected.	
				9				
				30				

PROJECT NAME: ARCO/N. MOLL. PROJECT NO: 212-350-0639.02
DATE DRILLED: 4/10/91 LOGGED BY: A. Harley
SCREEN DIA.: 4" LENGTH: 15' SLOT SIZE: 0.020"
CASING DIA.: 4" LENGTH: 5' TYPE: PVC Shc. 40
DRILLING CO.: Valley Well DRILL METHOD: HSA HOLE DIAMETER: 10.5"
TOTAL DEPTH: 20' TOC ELEV: DEPTH TO WATER: 15'

W-8

DEPTH ft	WELL CONST. PIPE	WELL CONST. FILL	PID ppm	SAMPLE NUMBER	BLOWS	USCS	FIELD DESCRIPTION
0		CNC					ASPHALT (1")
	BNK	BNT.					FILL: Brown sandy CLAY, hard, slightly moist. No hydrocarbon odor.
5			1	W8-5'	90	CL	@ 6-7': Hydrocarbon odor.
	SCREEN	SAND					ALLUVIUM: Red brown Sandy CLAY, hard, slightly moist, fine grained, subangular sand. Some mica. No hydrocarbon odor.
10			<1	W8-10'	33	CL	
			25				ALLUVIUM: Red-brown Clayey SAND, medium dense, medium to coarse grained, subangular, wet. No hydrocarbon odor.
15			3	W8-15'	18	SC	
							GRANODIORITE: Red-brown, medium grained Sand, some clay, some mica, wet, weathered. No hydrocarbon odor.
20			<1	W8-20'	37		Boring terminated at 20 feet. Groundwater encountered during drilling at 14 feet. Completed as monitoring well.
25							BNK - Blank CNC - Concrete BNT - Bentonite
30							

GROUNDWATER TECHNOLOGY, INC.

WELL LOG

FAC. #: 6061 Arco/N. Mollison
ADDRESS: 593 N. Mollison, El Cajon

SECOR

BOREHOLE WELL LOG

Number: MW11

Client: ARCO PRODUCTS COMPANY

Job No: 80600-035-05

Sheet: 1 of 1

Location: Arco Facility #6061, 593 North Mollison Ave., El Cajon, California

Drilling Company/Driller: West Hazmat Drilling Corporation/ Daniel Nichols

SECOR Rep: Patrick McConnell

Date Started: 6/16/95

Date Finished: 6/16/95

Drill Rig/Sampling Method: CME 75 HT / Hollow Stem Auger / Split Spoon

Borehole Dia.: 10"

Casing Dia.: 4"

Surface Elevation: ——

SAMPLE LOG			BOREHOLE LOG					WELL LOG
Sample Number	OVA/PID (ppm)	TPH Results (ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Descripton (Soil Type, color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
				0			FILL MATERIAL: backfill-Sand, Silt and Gravel-slope for bridge overpass.	
				2	SM		ALLUVIAL MATERIAL: silty SAND, dark brown (7.5YR 4/4), fine sand with non-plastic silt; 10% fine gravel, dry loose, no hydrocarbon (HC) odor.	
				4	SC		Clayey sand, reddish brown (5YR 4/4), fine to medium sand, slightly moist, low to medium plasticity, loose, no HC odor.	
MW11-6	1	–	31	6			Becomes yellowish red (5YR 4/6), very dense.	
MW11-8	1.5	–	87	8			Becomes dark yellowish brown (10YR 3/6), clay decreasing, 5-10% coarse sand.	
MW11-9.5	2.5	<1.0	87	10				
MW11-11	2.5	–	83	1	SM		Silty SAND, strong brown (7.5 YR 5/6), fine to very fine sand, low plasticity fines, slightly moist, very dense, no HC odor. Becomes wet at 13 feet.	
MW11-13	2	<1.0	76	3				
MW11-16	2.5	–	24	15	SC		DECOMPOSED GRANITE: Clayey SAND, brown to dark brown (7.5YR 5/4 to 4/4), fine to very fine sand with clay, wet, medium plasticity, medium dense, no HC odor.	
				6			Becomes brown (7.5YR 5/4), fine sand with low plasticity clay, loose, no HC odor.	
MW11-20	0	<1.0	10	20			Drilled to 20 feet. Sampled to 20.5 feet. Borehole converted to 4-inch diameter groundwater monitoring well. Screen interval is 0.02-inch slotted schedule 40 PVC. Filter pack is #3 monterey sand.	
				25				
				30				

SECOR

BOREHOLE/WELL LOG

Number: SW-2

Client: ARCO PRODUCTS COMPANY

Job No: 80600-035-14

Sheet: 1 of 1

Location: Facility #6061, 593 North Mollison Avenue, El Cajon, CA.

Drilling Company/Driller: West Hazmat Drilling Corp./ Bob Schlosser

SECOR Rep: D. Ries

Approved by: DWV

Date Started: 5/23/96

Date Finished: 5/23/96

Drill Rig/Sampling Method: CME-75 / Hollow Stem Auger / Split Spoon

Borehole Dia.: 8"

Casing Dia.: 1"

Surface Elevation: ——

SAMPLE LOG				BOREHOLE LOG				WELL LOG
Sample Number	OVA/PID (ppm)	TPH Conc. (ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
				0			Asphaltic Concrete	
				1	SC		ALLUVIAL MATERIAL: Clayey SAND, dark brown (10YR 3/3), fine grained, low plasticity, slightly moist, medium dense, no hydrocarbon (HC) odor.	
				2				
				3				
				4	SM		Silty SAND, dark brown (10YR 3/3), fine grained, slightly cohesive, slightly moist, dense, moderate to strong HC odor.	
SW2-5.5	>1000	19	117	5				
				6				
				7				
				8				
				9				
SW2-10	>1000	4,600	98	10				
				1			Becomes grayish brown (10YR 3/2), moderate HC odor.	
				2				
				3				
				4				
SW2-15	700	–	46	15				
				6			Becomes strong brown (7.5YR 4/6), mild HC odor.	
				7				
				8				
SW2-19	–	–	19	9				
				20			Total Depth 19 feet	
				1			Completed as an air sparge well with screen interval from 17.5 feet to 19 feet. Screen is 2-inch diameter by 1.5-foot long microporous bubbler. Blank casing is 1-inch diameter PVC. Screen interval filter packed with #2/16 Monterey sand.	
				2				
				3				
				4				
				25				
				6				
				7				
				8				
				9				
				30				

SECOR

BOREHOLE/WELL LOG

Number: SW-3

Client: ARCO PRODUCTS COMPANY

Job No: 80600-035-14

Sheet: 1 of 1

Location: Facility #6061, 593 North Mollison Avenue, El Cajon, CA.

Drilling Company/Driller: West Hazmat Drilling Corp./ Bob Schlosser

SECOR Rep: D. Ries

Approved by: DWV

Date Started: 5/23/96

Date Finished: 5/23/96

Drill Rig/Sampling Method: CME-75 / Hollow Stem Auger / Split Spoon

Borehole Dia.: 8"

Casing Dia.: 1"

Surface Elevation: ——

SAMPLE LOG			BOREHOLE LOG					WELL LOG
Sample Number	OVA/PID (ppm)	TPH Conc. (ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
				0			Asphaltic Concrete	
				1	GP		BACKFILL MATERIAL: Poorly graded GRAVEL, gray (10YR 5/1), 1/4 to 1/2 inch diameter, angular, dry, medium dense, trace of fines.	
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9			Wet, mild hydrocarbon (HC) odor.	
				10				
				1	SP		Poorly graded SAND, dark gray (5Y 4/1), medium grained, wet, loose, mild HC odor.	
				2				
				3				
				4	SM		Silty SAND, dark grayish brown (10YR 4/2), fine grained, slightly cohesive, wet, medium dense, mild HC odor.	
SW3-15	–	–	32	15				
				6				
				7				
				8				
SW3-20	–	–	30	9				
				20				
				1	ML		Sandy SILT, dark yellowish brown (10YR 4/4), fine grained sand, low plasticity, moist, stiff, mild HC odor.	
				2			Total Depth 21 feet	
				3			Completed as an air sparge well with screen interval from 17.5 feet to 19 feet. Screen is 2-inch diameter by 1.5-foot long microporous bubbler. Blank casing is 1-inch diameter PVC. Screen interval filter packed with #2/16 Monterey sand.	
				4				
				25				
				6				
				7				
				8				
				9				
				30				

SECOR

BOREHOLE/WELL LOG

Number: SW-4

Sheet: 1 of 1

Client: ARCO PRODUCTS COMPANY

Job No: 80600-035-14

Location: Facility #6061, 593 North Mollison Avenue, El Cajon, CA.

Drilling Company/Driller: West Hazmat Drilling Corp./ Bob Schlosser

SECOR Rep: D. Ries

Approved by: DWV

Date Started: 5/23/96

Date Finished: 5/23/96

Drill Rig/Sampling Method: CME-75 / Hollow Stem Auger / Split Spoon

Borehole Dia.: 8"

Casing Dia.: 1"

Surface Elevation: ——

SAMPLE LOG			BOREHOLE LOG					WELL LOG
Sample Number	OVA/PID (ppm)	TPH Conc. (ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Descripton (Soil Type, color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
				0			Asphaltic concrete over concrete	
				1	GP		BACKFILL MATERIAL: Poorly graded GRAVEL, gray (10YR 5/1), 1/4 to 1/2 inch diameter, angular, dry, medium dense, trace of fines.	
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9			Wet with mild hydrocarbon (HC) odor, sheen on water.	
				10				
				1				
				2				
				3				
				4	SM		Silty SAND, dark grayish brown (10YR 4/2), fine grained, slightly cohesive, wet, medium dense, mild HC odor.	
SW4-15	350	–	45	15				
				6				
				7				
				8			Becomes brown (10YR 5/3).	
				9				
				20				
SW4-20	15	–	38	1				
				2			Total Depth 21 feet	
				3			Completed as an air sparge well with screen interval from 17.5 feet to 19 feet. Screen is 2-inch diameter by 1.5-foot long microporous bubbler. Blank casing is 1-inch diameter PVC. Screen interval filter packed with #2/16 Monterey sand.	
				4				
				25				
				6				
				7				
				8				
				9				
				30				

SECOR

WELL LOG

Number: SW-6

Client: ARCO Products Corp.

Job No: 008.60009

Sheet: 1 of 1

Location: ARCO Facility #6061
593 North Mollison Ave.
El Cajon, CA 92091

Drilling Company/Driller: West Hazmat Drilling Co./ Robert Suffle

SECOR Rep: Nikole Immel

Approved by:

Date Started: 12/2/99

Date Finished: 12/2/99

Drill Rig/Sampling Method: CME-75 / Hollow-stem Auger/Split Spoon Sampler

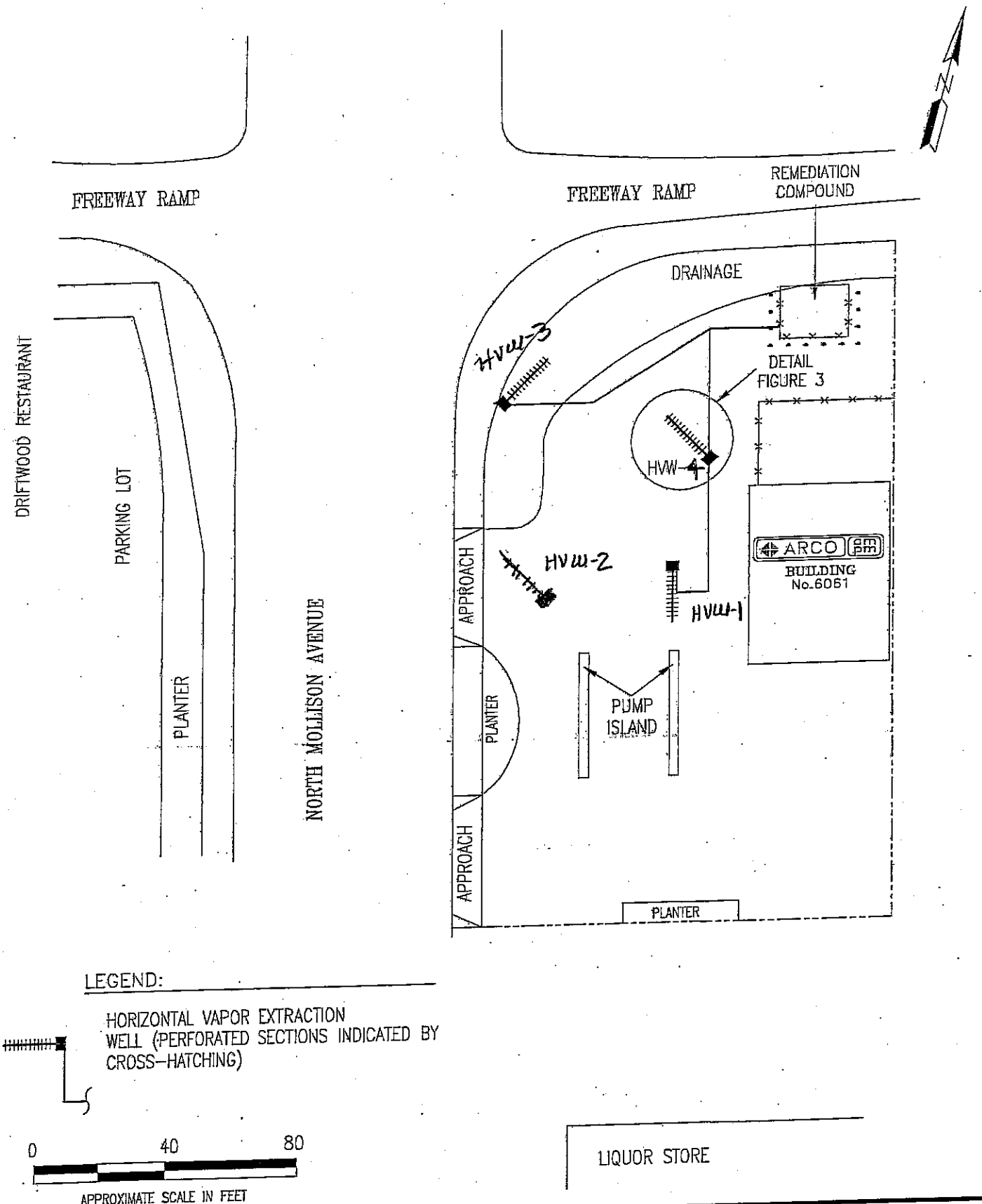
Borehole Dia.: 8"

Casing Dia.: 1"

Surface Elevation: --

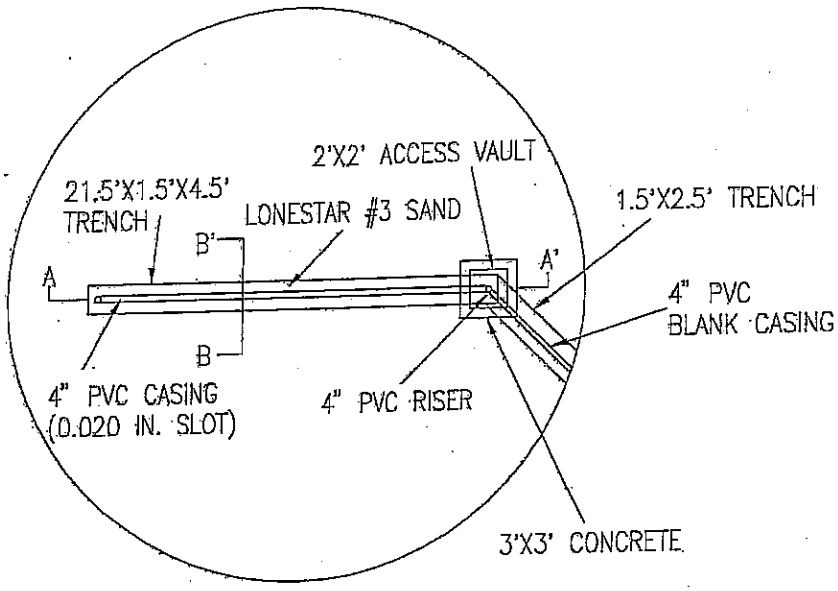
SAMPLE LOG			BOREHOLE LOG					
Sample Number	OVA/PID (ppm)	Lab Results TPH(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)	Backfill Detail
				0			Topsoil	
				1	ML		SILT, brown (7.5YR – 4/4), trace fine grained sand, hard, no hydrocarbon (HC) odor.	
				2				
				3				
				4				
				5	ML		Sandy SILT, brown (10YR–4/3), fine grained sand, moist, very hard, strong HC odor.	
				6				
				7				
SW-6-8'	0	ND	30/6 56/6	8				
SW-6-8.5'	0	–	75/5	9				
				10			– decreased sand content, becomes very dark grayish brown (10YR 3/2)	
SW-6-11'	0	170	55/6 50/6	1				
				2				
				3				
				4				
				15				
SW-6-16'	0	1.3	40/6 40/6	6			light HC odor	
				7				
				8				
				9				
				20	SM		Silty SAND, brown (10YR 4/3), fine grained, wet, very dense, no HC odor.	
SW-6-20.5'	0	ND	70/6	1			TOTAL DEPTH = 20.5 FEET BGS.	
				2				
				3				
				4				
				25				
				6				
				7				
				8				
				9				
				30				

Completed as air sparge well with screen interval from 19.5 ft. to 18 ft. Screen is 1 inch diameter by 1.5 ft. long microporous bubbler. Blank casing is 1 inch diameter PVC. Screen interval filter packed with #3 SAND.

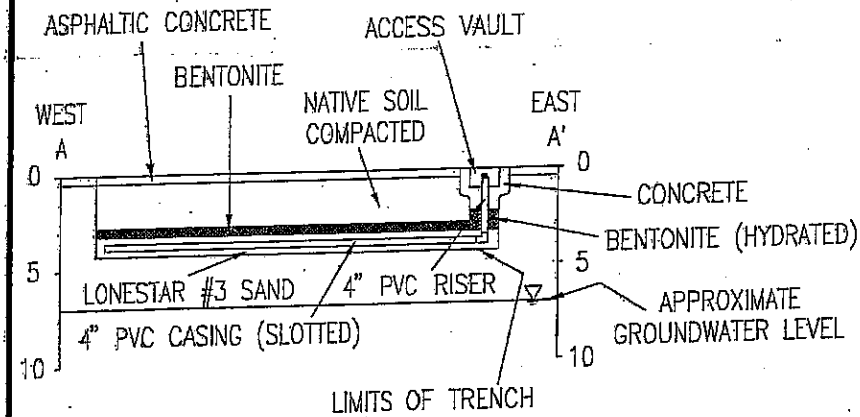


SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108	HORIZONTAL VAPOR EXTRACTION WELL LOCATION ARCO FACILITY #6061 593 N. MOLLISON AVE. EL CAJON, CALIFORNIA	PROJECT No.: 80600-035-14 FIGURE: 2

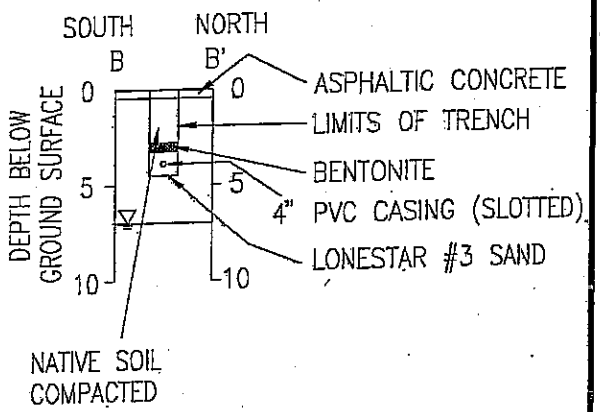
6061SP1D.DWG

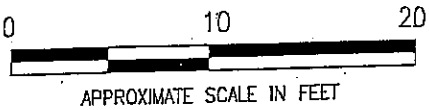


CROSS SECTION A-A'



CROSS SECTION B-B'





SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108	HORIZONTAL VAPOR EXTRACTION WELL DETAIL ARCO FACILITY #6061 593 N. MOLLISON AVE. EL CAJON, CALIFORNIA	PROJECT No.: 80600-035-14 FIGURE: 3

HSVE.DWG

SECOR

BOREHOLE/WELL LOG

Number: HVW-1

Sheet: 1 of 1

Client: ARCO PRODUCTS COMPANY

Job No: 80600-035-14

Location: ARCO Facility #6061
593 North Mollison Ave.
El Cajon, CA

Drilling Company/Driller:
West Hazmat Drilling Corp. /
Installed with Backhoe

SECOR Rep: Scott Strosnider and David Varco

Approved by: DWV

Borehole Dia.: 12"

Casing Dia.: 4"

Surface Elevation: —

Date Started: 12/7/96

Date Finished: 12/17/96

Drill Rig/Sampling Method: Horizontal Well-dug with backhoe/no sampling performed

SAMPLE LOG			BOREHOLE LOG					WELL LOG
Sample Number	OVA/PID (ppm)	Lab Results (ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Descripton (Soil Type, color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
				0			Asphaltic Concrete	
				1	SC		ALLUVIAL MATERIAL: Clayey SAND, dark brown to gray, fine to medium sand with clay, low to medium plasticity, slightly moist, loose to medium dense, gravel locally near the former USTs.	
				2				
				3				
				4				
				5			Well consists of 3 20-feet long screened intervals (0.02 inch slotted schedule 40 PVC). Filter pack is #3 Monterey sand. Refer to figure for detailed construction. Trench dug approximately 54 inches deep. Top of sand is 37 inches bgs. Top of bentonite 32 inches bgs. Soil placed in 3 12 inches thick lifts and compacted with a wacker. Finished to grade with hot patch asphaltic concrete.	
				6				
				7				
				8				
				9				
				10				
				11				
				12				
				13				
				14				
				15				
				16				
				17				
				18				
				19				
				20				
				21				
				22				
				23				
				24				
				25				
				26				
				27				
				28				
				29				
				30				

SECOR

BOREHOLE WELL LOG

Number: HVW-2

Sheet: 1 of 1

Client: ARCO PRODUCTS COMPANY

Job No: 80600-035-05

Location: Arco Facility #6061
593 North Mollison Ave.
El Cajon, California

Drilling Company/Driller:
Ace Excavating
Installed with Backhoe

SECOR Rep: Patrick McConnell

Date Started:	Date Finished:	Drill Rig/Sampling Method:	Borehole Dia.:	Casing Dia.:	Surface Elevation:
6/20/95	6/21/95	Horizontal Well-dug with backhoe/ no sampling performed	18"	4"	——

SAMPLE LOG			BOREHOLE LOG					WELL LOG
Sample Number	OVA/PID (ppm)	TPH Results (ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, color, grain, minor soil component, moisture, density, odor, etc.)	Well Design
				0			Asphaltic Concrete	
				1	SC		ALLUVIAL MATERIAL: clayey SAND, dark brown to gray, fine to medium sand with clay, slightly moist, loose to medium dense, low to medium plasticity, no hydrocarbon odor at 1-2 feet below grade. Moderate hydrocarbon odor locally below 2 feet.	
				2				
				3				
				4				
				5				
				6				
				7				
				8				
				9				
				10				
				1				
				2				
				3				
				4				
				15				
				6				
				7				
				8				
				9				
				20				
				1				
				2				
				3				
				4				
				25				
				6				
				7				
				8				
				9				
				30				

Screen is 20 feet long, 0.02 inch slotted schedule 40 PVC. Filter pack is #3 monterey sand. Refer to figure for detailed construction.
Trench dug 54 inches deep.
Sand 6 inches in bottom.
Top of sand 39 inches B.G.S.
Top of bentonite 34 inches B.G.S.
Soil placed in 3, 12 inch · thick lifts, compacted with a wacker.
Finished to grade with hot patch asphaltic concrete and sealed.

SW-1 on siteplan

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well SOW-1

See Site Map For Boring Location

Project Arc/N. Mollison   Owner Arco Products Company
Location 593 N. Mollison, El Cajon, CA   Proj. No. 023404443
Surface Elev. ____   Total Hole Depth 20.5 ft.   Diameter 10 in.
Top of Casing ____   Water Level Initial 17.5 ft.   Static ____
Screen: Dia 2 in.   Length See well completions   Type/Size SCH 40 in.
Casing: Dia 2 in.   Length See well completions   Type SCH 40
Fill Material ____   Rig/Core ____
Drill Co. A & R Drilling   Method ____
Driller Bob Schlosser   Log By Tim Busby   Date 12/16/93   Permit # ____
Checked By Kyle Rheubottom   License No. RG 5100

COMMENTS:

Samples in 8 to 9.5 feet, 9.5 to 11, show some discoloration. 19.0 to 20.5 feet, only 75% recovery.

Depth (ft.)	HNU (ppm)	Sample ID	Blow Count/ % Recovery	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
0		SOW-1			
5.0–6.5	1	5	8, 12, 28	SC	5.0 to 6.5 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, damp, no odor.
8.0–9.5	160	8.5	16, 18, 12	SC	8.0 to 9.5 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, damp, moderate odor.
9.5–11.0	380	10	14, 31, 31	SC	9.5 to 11.0 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, damp moderate odor.
11.5–13.0	260	12	12, 12, 24	SC	11.5 to 13.0 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, damp, moderate odor.
13.0–14.5	390	13.5	12, 16, 26	SC	13.0 to 14.5 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, damp, moderate odor.
14.5–16.0	400	15		SC	14.5 to 16.0 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, damp, moderate odor.
16.0–17.5	300	16.5	14, 24, 35	SC	16.0 to 17.5 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, damp, moderate odor.
17.5–19.0	390	18		SW	17.5 to 19.0 ft. Gravelly SAND (SW): Very fine to very coarse, 10–20% clay, brown, saturated.
19.0–20.5		20		SW	19.0 to 20.5 ft. Gravelly SAND (SW): Very fine to very coarse, 10–20% clay, brown, saturated.
20.5					TD at 20.5 ft.

02/15/1994 lithlog-mar93

SOW 1 on site plan

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well **SW-1**

Project *Arc/N. Mollison* Owner *Arco Products Company*

Location *593 N. Mollison, El Cajon, CA* Proj. No. *023404443*

Surface Elev. ____ Total Hole Depth *25 ft.* Diameter *10 in.*

Top of Casing ____ Water Level Initial *16 ft.* Static ____

Screen: Dia *2 in.* Length *See well completions* Type/Size *SCH 40 in.*

Casing: Dia *2 in.* Length *See well completions* Type *SCH 40*

Fill Material ____ Rig/Core ____

Drill Co. *A & R Drilling* Method ____

Driller *Bob Schlosser* Log By *Tim Busby* Date *12/16/93* Permit # ____

Checked By *Kyle Rheubottom* License No. *RG 5100*

See Site Map For Boring Location

COMMENTS:

(Posthole) 0–4.5 brown clayey sand, sample wet at 14 ft.

Depth (ft.)	Well Completion	HNU (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0			SW-1				
2							
4		20	5	11 15 30			4.0 to 5.5 ft. Clayey SAND (SC): Very fine to medium, 35–50% clay, brown, dry.
6		80	7	20 21 41		SC	7.0 to 8.5 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, damp, moderate odor.
8							
10		200	10.5	20 23 21			10.0 to 11.5 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, gray brown to brown, damp.
12		85	12.5	20 25 32			11.5 13.0 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, damp.
14		186	13.5	7 7 15			13.0 to 14.5 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, damp.
16		200	15				14.5 to 16.0 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, wet.
18		136	16.5	12 22 22		SW	16.0 to 17.5 ft. Gravelly SAND (SW): Very fine to very coarse, brown, saturated, faint odor.
20		28	17.5	9 12 17		SC	17.5 to 19.0 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown, saturated, faint odor.
22		30	20	8 12 18			
24		42	21	10 12 19		SW	19.0 to 20.5 ft. Gravelly SAND (SW): Very fine to coarse, 10–20% clay, brown, saturated.
26		190	22.5	8 9 12			20.5 to 22.0 ft. Gravelly SAND (SW): Very fine to very coarse, <10% clay, brown, saturated.
28		136	25	8 12 19			22.0 to 23.5 ft. Gravelly SAND (SW): Very fine to very coarse, 10–20% clay, brown, saturated.
30							23.5 to 25 ft. Gravelly SAND (SW): Very fine to very coarse, 20–35% clay, brown, saturated.
							TD at 25 ft.

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well **VW1**

Project *Arc/N. Mollison* Owner *Arco Products Company*

Location *593 N. Mollison, El Cajon, CA* Proj. No. *023403066*

Surface Elev. ____ Total Hole Depth *10 ft.* Diameter *8 in.*

Top of Casing ____ Water Level Initial *N/A ft.* Static ____

Screen: Dia *2 in.* Length *5 ft.* Type/Size *SCH 40/0.020 in.*

Casing: Dia *2 in.* Length *5 ft.* Type *SCH 40*

Fill Material ____ Rig/Core ____

Drill Co. *A & R Drilling* Method ____

Driller *Bob Shlosser* Log By *Tim Busby* Date *12/17/93* Permit # *W93655*

Checked By *Kyle Rheubottom* License No. *RG 5100*

See Site Map For Boring Location

COMMENTS:

Dark brown, clayey sand, VF–M damp. At 4 ft. and 5 ft., very dense. Sampler only driven 12 inches.

Depth (ft.)	Well Completion	HNU (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
−2							
0			VW1–				
2				22			3.0 to 4.5 ft. Clayey SAND (SC): Very fine to medium, 10–20% clay, dark brown, damp, faint odor.
4		10	4	52			
6		10	5.5	61 65		SC	5.0 to 6.5 ft. Clayey SAND (SC): Very fine to medium, 20–35% clay, brown to dark brown, damp, faint odor.
8		40	8	14 27 31			7.5 to 9.0 ft. Clayey SAND (SC): Very fine to medium, 35–50% clay, dark brown to brown, damp, faint odor.
10							TD at 10 ft.
12							
14							
16							
18							
20							
22							
24							

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Well **RW1**

Project *Arc/N. Mollison* Owner *Arco Products Company*

Location *593 N. Mollison, El Cajon, CA* Proj. No. *023403066*

Surface Elev. ____ Total Hole Depth *26.5 ft.* Diameter *8 in.*

Top of Casing ____ Water Level Initial *20 ft.* Static ____

Screen: Dia *6 in.* Length *20 ft.* Type/Size *SCH/Wire Wrapped in.*

Casing: Dia *6 in.* Length *5 ft.* Type *SCH 40*

Fill Material ____ Rig/Core ____

Drill Co. *A & R Drilling* Method ____

Driller *Bob Shlosser* Log By *Tim Busby* Date *12/17/93* Permit # *W93655*

Checked By *Kyle Rheubottom* License No. *RG 5100*

See Site Map For Boring Location

COMMENTS:

Soil in 5 to 6.5 feet has discolor and odor. 7.5 to 9 feet some pebbles (D.G.) only 12" driven

Depth (ft.)	Well Completion	HNU (ppm)	Sample ID	Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2 to 30			RW1-				
4 to 6		120	5.5	10, 24, 40			5.0 to 6.5 ft. Clayey SAND (SC): Very fine to medium, 10–20% clay, brown, damp, weak odor.
6 to 8		190	B	17, 52			7.5 to 9.0 ft. Clayey SAND (SC): Very fine to medium, 35–50% clay, brown, damp, faint to moderate odor.
12		440	12.5	14, 24, 38		SC	12.0 to 13.5 ft. Clayey SAND (SC): Very fine to medium, 35–50% clay, brown, damp, weak to moderate odor.
14 to 16		200	15	15, 15, 30			15.0 to 16.5 ft Clayey SAND (SC): Very fine to medium, 35–50% clay, brown, moist, moderate odor.
20		110	20	10, 24, 35			20.0 to 21.5 ft. Clayey SAND (SC): Very fine to medium, 35–50% clay, brown, saturated, weak odor.
24 to 26		150	25	10, 22, 34			25.0 to 26.5 ft. Clayey SAND (SC): Very fine to coarse, brown, saturated.
26							TD at 26.5 ft.

02/15/1994 lithlog-mar93